



## **Baikiaea plurijuga**

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## *Baikiaea plurijuga* Harms

### Taxonomy and nomenclature

**Family:** Fabaceae (Caesalpinoideae)

**Synonyms:** none.

**Vernacular/common names:** Rhodesian teak, Zambezi teak, Zambezi redwood, Zimbabwean teak, Zambian teak (Eng.); mukusi (Botswana and Zambia); Rhodesiese kiaat (South Africa); Zimbabwean teak, Zimbabwean chestnut, umgusi, mukusi (Zimbabwe).

### Distribution and habitat

The species is confined to lowland tropical forests on the deep Kalahari sands between 13 and 20°S. It occurs naturally in Angola, Botswana, Namibia, Zambia and Zimbabwe, in areas with annual rainfall of 600-1000 mm and a dry season of 6-8 months. Mature trees can withstand extreme temperatures of over 40°C and have been known to survive severe frost down to -15°C. It is mainly found in deep, infertile, sandy soils where it survives by developing a deep tap root.

During the last century, most of the original Zambesi teak forests have been heavily exploited by logging, clearing of land for agriculture and frequent fires and the species is now mainly found in open, dry, deciduous woodland. The species is most typically associated with *Pterocarpus angolensis*, *Julbernardia paniculata*, *Dialium englerianum*. In the extreme southeast of Angola and northern Namibia pure stands are rare. In Zambia, *in situ* conservation stands have been established. It has not been planted outside the area of natural distribution.

### Uses

The wood is heavy, fine-grained, strong and durable. It has a beautiful red-brown colour, is slow drying and is rated as one of the worlds finest commercial timbers. The timber is used as a general timber for bridge construction, flooring, railway sleepers, furniture a.o. It is resistant to termites and borers and used in certain areas as fencing posts. It makes good fuel, producing very hot coals. Locally the bark is used in medicine and for tanning leather but not for its wood as it is too hard to cut. The Zambezi teak forests provide extensive grazing for cattle and opportunities for wildlife management. They cover some of the most important national parks in the region, and are important for biodiversity conservation.

### Botanical description

A medium to large tree, 8-15 (20) m tall, with a large, dense, spreading crown. The bark is smooth and pale at first, on older trees becoming fissured and cracked. Leaves are alternate and compound with 4 to 5 pairs of opposite leaflets. Each leaflet is up to 7 cm long, sparingly hairy especially on the lower surface and midrib; the tip is rounded. The large, pink flowers are very attractive; they are borne in up to 30 cm long inflorescences.



Natural stand of *Baikiaea plurijuga* in Mkhosana village near Victoria Falls, Zimbabwe. Photo: Jacob Jepsen.

### Fruit and seed description

**Fruit:** The fruit is a flattened, woody pod up to 14 cm long and 5 cm wide and broadest near the tip. The surface is covered with brown velvety hairs which are frequently rubbed off to reveal golden-yellow patches. When it is ripe, the pod splits open explosively and scatters the seeds widely.

**Seed:** the seeds are hard, oval and up to 2.5 cm long with a smooth and shiny brown surface. There are 750 - 1000 seeds per kg.

## Flowering and fruiting habit

The flowers are pollinated by insects. Flowering occurs in December to March and the fruits mature in June to September. Seed production is linked to rain-fall patterns of the previous year and the trees do not set seed every year.

## Harvest

Seeds can be collected from the ground but as they are heavily predated by rodents collection must be well timed. When the fruits begin to open, nets or tarpaulins can be placed on the ground under the tree and the seeds gathered daily. It is difficult and time-consuming to collect ripe fruits from the tree, as the pods are firmly attached to the tree.

## Processing and handling

After collection the seeds are dried in the sun.



Open pods and seeds of *Baikiaea plurijuga* from Zimbabwe.  
Photo: Jacob Jepsen.

## Storage and viability

The seeds are orthodox and should be stored at low moisture content (7-10%) in air-tight containers. At room temperature the seeds can be stored for at least one year, longer in cold store.

## Dormancy and pretreatment

Freshly harvested seeds can germinate without pretreatment but after drying it may be necessary to scarify the hard seed coat. The recommended pretreatment is to soak the seeds in 80°C hot water for 2 minutes followed by soaking in cold water for 24 hours.

## Sowing and germination

Seed viability is high and seeds germinate 80-90% within 7-25 days. The seeds are sown directly in containers at a sowing depth of 4-5 cm. However, it is difficult to raise seedlings of this species in the nursery because of the long taproot. Already one or two weeks after germination the tap root will grow below the base of a normal-sized open container. At 6 months seedlings are still only 6-7 cm tall but the taproot has grown 40 cm long. Root pruning is not recommended as a new taproot is not developed once the original is cut. Direct sowing is also problematic. Seeds and seedlings are heavily predated by rodents and duikers, and seedlings and young trees are often killed by fire or frost.

## Selected readings

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